CONSTRUCTION MASTER® PRO

ADVANCED CONSTRUCTION-MATH CALCULATOR

Model 4065 v3.1

Pocket Reference Guide

CALCULATED INDUSTRIES®

CONSTRUCTION MASTER® PRO v3.1

The *Construction Master Pro* calculators help you save time, cut costly errors and build *like a pro!*

Quickly Solve:

- *Metric Dimensional Problems and Conversions*
- *Areas, Volumes and Weights*
- *Column/Cone Area and Volume*
- *Blocks/Bricks, Drywall and Footings*
- *Circle/Arc Calculations*
- *Common, Hip/Valley, Jack Rafter Lengths (regular and irregular) and Cut Angles*
- *Rake-Wall Solutions*
- *Roofing Materials*
- *Stair Layout Solutions*

TABLE OF CONTENTS

NOTE TO METRIC USERS 1
KEY DEFINITIONS 4
- Basic Function Keys 4
- Unit Keys 5
- Length, Width and Height Keys 5
- Circle/Arc Keys 5
- Construction Project Keys 6
- Right Triangle/Roof Framing Keys 7
- Stair Layout Key 9
- Customizable Stair Settings 10
- Miscellaneous Functions 10

ENTERING DIMENSIONS 12
- Entering Linear Dimensions 12
- Entering Square/Cubic Dimensions .. 12

EXAMPLES 13
- Adding and Subtracting Strings of Dimensions 13
- Rectangular Area and Volume 14
- Entering Square and Cubic and Adding a Waste Allowance 14
- Using Multi-Function Height Key 15
- Dividing Dimensions 15
- Linear Conversions 16
- Blocks 16
- Board Feet and Cost 17
- Circle Area and Circumference 17
- Circle/Arc Properties 18
- Compound Miter 18
- Concrete Columns 19

Concrete Footings 20
Concrete Volume for Driveway 20
Converting D:M:S 21
Polygon – *Brick Paving* 21
Squaring-Up a Foundation 22
Studs 23
RIGHT ANGLE/FRAMING 24
Pitch – *Converting Roof Angle* 24
Converting Slope 24
Common Rafter Length 25
Regular Hip/Valley and Jack Rafters .. 26
Irregular Hip/Valley 27
Rake-Wall – *No Base* 28
Rake-Wall – *With Base* 29
STAIRS 30
Stairs – *Given Rise and Run* 30
Stairs – *Given Rise Only* 31
Stairs – *Riser Limited Function* 32
DEFAULT SETTINGS 33
REPAIR AND RETURN 35

NOTE TO METRIC USERS

The factory-set Stored Values and Preferences for the Construction Master Pro are set in imperial values. You can easily change these values to the metric values you use in your work. These values will be stored, even after the unit has been powered off, until you do a Clear All (Conv ⊠), a Full Reset, or change the batteries.

Below are the metric default values used in the examples in this guide, along with instructions on how to change them from the imperial default values. Calculation results shown in the guide have been rounded. Your calculator's LCD display will give results with as many as six digits to the right of the decimal.

STORED VALUES	DEFAULT VALUE
Desired Riser Height	**200 MM**
Desired Tread Width	**250 MM**
Floor Height	**250 MM**
On-center Spacing	**400 MM**

(Cont'd)

(Cont'd)

STORED VALUES	DEFAULT VALUE
Weight per Volume	**1500 KG Per CU M**
Block Area	**80000 SQ MM**
Block Length	**400 MM**
Footing Area	**170000 MM**

To change the default values, enter the new value, then press **Stor** and the key for the value being changed. For example, to change the Desired Riser Height from 7 ½ inches to 200 mm:

KEYSTROKE	DISPLAY
1. Convert Desired Riser Height to 200 mm:	
2 0 0 **Conv** 9 **Stor** 7	**R-HT** STORED **200 MM**
2. Convert Desired Tread Width 250 mm:	
2 5 0 **Conv** 9 **Stor** 9	**T-WD** STORED **250 MM**
3. Convert Floor Height to 250 mm:	
2 5 0 **Conv** 9 **Stor** 8	**FLOR** STORED **250 MM**

4. Convert On-Center Spacing to 400 mm:

4 0 0 Conv 9 Stor 5

OC STORED **400 MM**

5. Convert Weight Per Volume to 1500 kG per cu m:

1 5 0 0 Stor 0

(press 0 until desired value is displayed)

STORED **1500 KG PER CU M**

6. Convert Block Area to 80000 sq mm:

8 0 0 0 0 Conv 9 9 Stor 4

B-AR STORED **80000 SQ MM**

7. Convert Block Length to 400 mm:

4 0 0 Conv 9 Stor Conv Length

B-LN 400 MM

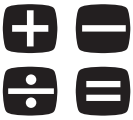
8. Convert Footing Area to 170000 sq mm:

1 7 0 0 0 0 Conv 9 9 Stor Conv 6

F-AR STORED **170000 SQ MM**

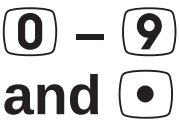
KEY DEFINITIONS

Basic Function Keys



Arithmetic operation keys.

Four-function (+, –, x, ÷) percent key.



Keys used for entering numbers.

Off Key — Turns all power off, clearing all non-permanent registers.

On/Clear Key — Turns on power. Pressing once clears the display. Pressing twice clears all temporary values.

Convert Key — Used with the dimensional keys to convert between dimensions or with other keys to access special functions.

Store Key — Used for storing values.

Recall Key — Recalls stored values.

Unit Keys

Yds	Yards
Feet	Feet
Inch	Inch
/	Fraction Bar
m	Meters
Conv 7	Centimeters
Conv 9	Millimeters
Conv 2	Acres

Length, Width and Height Keys

Length	Enters length for calculation of area or volume.
Width	Calculates area, square-up and perimeter.
Height	Calculates volume, wall area and total room area.

Circle/Arc Keys

Circ	***Circle*** — Calculates circle area and circumference.
Arc	***Arc*** — Calculates Arc Length or Degree, chord length, segment area, pie slice area, segment rise, and length of arched segment wall studs.

Conv Arc ***Radius*** — Enters or calculates circle radius.

Construction Project Keys

Conv Length ***Blocks/Bricks*** — Finds the number of blocks or bricks for a given area and stored block/brick size.

Stor 4 — *Stores block or brick size.*

Conv 8 ***Board Feet*** — Enters or converts cubic values to Board Feet.

Comp Miter ***Compound Miter*** — Calculates (based on entered spring and wall corner angle) miter angle, and bevel angle for cutting crown moulding.

Stor Comp Miter —*Stores value other than default spring (crown) angle of 45°.*

Conv Circ ***Column/Cone*** — Calculates the volume and surface area of a Column and/or Cone.

Conv Height ***Drywall*** — Calculates number of drywall sheets based on entered or calculated area.

Conv **Width** ***Footing*** — Finds quantity of concrete, based on entered wall length and stored footing area.

Stor **6** — *Stores footing area.*

Conv **Diag** ***Roof*** — Calculates roof area, number of roof squares and bundles, and number of 4 x 8 sheets based on an entered or calculated plan area.

Conv **Run** ***Polygon*** — Calculates full angle, bi-sect angle, side length, perimeter and area based on entered radius and number of sides.

Conv **5** ***Studs*** — Calculates number of studs based on stored On-center spacing and entered length of wall.

Right Triangle/Roof Framing Keys

Pitch Enters or calculates the slope.

Conv **Pitch** ***Slope*** — Enters a Pitch ratio, or slope (e.g., • **5** **8** **3** **Conv** **Pitch**).

Rise Enters or calculates the vertical leg of a right triangle.

Conv **Rise** ***Rake-Wall*** — Finds the stud sizes based on entered right triangle values.

Run Enters or calculates the horizontal leg of a right triangle.

Diag ***Diagonal*** — Enters or calculates the Diagonal leg, or Common rafter.

Hip/V ***Hip/Valley*** — Calculates length of the regular or irregular Hip/Valley rafter.

Conv **Hip/V** Enters *irregular* pitch used to calculate lengths of the irregular Hip/Valley and Jack rafters.

Jack Calculates Jack rafter lengths on the *regular*-pitched roof side.

Conv **Jack** Calculates Jack rafter lengths on the *irregular*-pitched roof side.

Stor **5** — *Stores On-center spacing value for rafters and Rake-Walls. Also used for studs.*

Stair Layout Key

Stair Given rise and/or run and stored variables, calculates or displays:

Press	Result
1	Riser Height
2	Number of Risers
3	Riser Overage/ Underage
4	Tread Width
5	Number of Treads
6	Tread Overage/ Underage
7	Stairwell Opening
8	Stringer Length
9	Angle of Incline
10	Stored or Calculated Run
11	Stored or Calculated Rise
12	Stored Desired Riser Height
13	Stored Desired Tread Width
14	Stored Headroom
15	Stored Floor Thickness

Conv Stair ***Riser Limited*** — Recalculates *Riser Height* and other stair values if you're limited by local code. The calculated Riser Height will never exceed the *stored* Desired Riser Height.

Customizable Stair Settings

Stor 7 Stores Desired Riser Height.

Stor 9 Stores Desired Tread Width.

Stor 8 Stores Floor Thickness.

Conv Stor
Stor Stor
Stor Sets Headroom. See large User's Guide, Preference Settings, for details.

Miscellaneous Functions

← Backspace Key

Rcl = Paperless Tape

Conv Stor Preference Settings

Conv ÷ (1/x) Reciprocal

Conv × Clear All

Conv − (+/–) Toggle

Conv + Pi (π) 3.141593

Conv •	Converts between D:M:S and Decimal Degrees.
Conv %	x^2
Conv ←	($\sqrt{x}$) Square Root
Conv /	Exponential Notation ($x10^y$)
Conv 0	Total Cost (based on entry of per unit cost)
Stor 0	Stores Weight per Volume
Conv 6	Tons
Conv 4	Pounds
Conv 3	Metric Tons
Conv 1	Kilograms
M+	Memory +
Conv M+	(M–) Memory Minus
Stor 1	(M1) Storage Register
Stor 2	(M2) Storage Register
Stor 3	(M3) Storage Register
Rcl Rcl	Recall and Clear M+
Rcl M+, 1, 2 or 3	Recall M+, M1, M2 or M3

ENTERING DIMENSIONS

Entering Linear Dimensions

Examples of entering Linear Dimensions:

DIMENSION	KEYSTROKE
Clear calculator	On/C
17.5 m	1 7 • 5 m
Clear calculator	On/C
100 cm	1 0 0 Conv 7
Clear calculator	On/C
500 mm	5 0 0 Conv 9

Entering Square/Cubic Dimensions

Examples of entering Square and Cubic Dimensions:

KEYSTROKE	DISPLAY
On/C On/C	**0.**
Enter numeric value and press desired unit key once to label value as "Linear:"	
1 0 0 Conv 9	**100. MM**

KEYSTROKE	DISPLAY
On/C On/C	**0.**
Enter numeric value and press desired unit key twice to label value as "Square:"	
1 0 0 Conv 9 9	**100. SQ MM**

KEYSTROKE	DISPLAY
On/C On/C	0.

Enter numeric value and press desired unit key three times to label value as "Cubic:"

1 0 0 Conv 9 9 9

100 CU MM

Note: If you pass the desired dimensional format, keep on pressing the dimensional unit key until the desired result is displayed again.

EXAMPLES

Adding and Subtracting Strings of Dimensions

Add the following measurements:

- 850 mm
- 1.2 m
- 600 mm

Then subtract 175 mm.

KEYSTROKE	DISPLAY
8 5 0 Conv 9 +	
1 • 2 m +	
6 0 0 Conv 9 =	**2650. MM**
− 1 7 5 Conv 9 =	**2475. MM**

Rectangular Area and Volume

Find the area and volume:

- Length: 6200 mm
- Width: 3500 mm
- Height: 450 mm

KEYSTROKE	DISPLAY
6 2 0 0 Conv 9 Length	
3 5 0 0 Conv 9 Width Width	
	AREA 21.7 SQ M
4 5 0 Conv 9 Height Height	
	VOL 9.765 CU M

Entering Square and Cubic and Adding a Waste Allowance

Add a 10% waste allowance to 5200 sq mm. Then add a 20% waste allowance to 4500 cu mm:

KEYSTROKE	DISPLAY
5 2 0 0 Conv 9 9 + 1 0 %	
	5720. SQ MM
4 5 0 0 Conv 9 9 9	
+ 2 0 %	**5400. CU MM**

Using Multi-Function Height Key

Find the volume, wall area and total room area of a room measuring 4500 mm x 5500 mm. The room is 2500 mm high.

KEYSTROKE	DISPLAY
On/C On/C	0.
4 5 0 0 Conv 9 Length	LNTH 4500. MM
5 5 0 0 Conv 9 Width	WDTH 5500. MM
2 5 0 0 Conv 9 Height	HGHT 2500. MM
Height	VOL 61.875 CU M
Height	WALL 50. SQ M
Height	ROOM 74.75 SQ M

Dividing Dimensions

Divide 4700 mm into thirds (divide by 3):

KEYSTROKE	DISPLAY
4 7 0 0 Conv 9 ÷ 3 =	1567. MM

Linear Conversions

Convert 3200 mm to other dimensions:

KEYSTROKE	DISPLAY
3 2 0 0 Conv 9	**3200. MM**
Conv 7	**320. CM**
Conv m	**3.200 M**
Conv Feet*	**10 FEET 6 INCH**
Conv Inch*	**126 INCH**
Conv Yds	**3.5 YD**

**Repeated presses of Feet or Inch will toggle between Feet-Inch-Fractions and Decimal Feet or Inches.*

Blocks

How many blocks (block size 200 mm x 400 mm) will you need to build a retaining wall measuring 2400 mm x 6700 mm?

KEYSTROKE	DISPLAY
On/C On/C	**0.**
2 4 0 0 Conv 9 ×	
6 7 0 0 Conv 9 m =	**16.08 SQ M**
Conv Length *(Blocks)*	**BLKS 201.**

Board Feet and Cost

Find the total Board Feet for the following boards: 2 x 4 x 16, 2 x 10 x 18 and 2 x 12 x 20. What is the total cost at $275 per MBM?

KEYSTROKE	DISPLAY
On/C On/C	0.
2 × 4 × 16 Conv 8 M+	BDFT 10.66667 M
2 × 10 × 18 Conv 8 M+	BDFT 30. M
2 × 12 × 2 0 Conv 8 M+	BDFT 40. M
Rcl Rcl	BDFT 80.66667
× 275 Conv 0 *(Cost)*	$22.18

Circle Area and Circumference

Find the area and circumference of a circle with a diameter of 625 mm:

KEYSTROKE	DISPLAY
On/C On/C	0.
625 Conv 9 Circ	DIA 625. MM
Circ	AREA 306796. SQ MM
Circ	CIRC 1963. MM

Circle/Arc Properties

Find Arc properties given a 1500 mm diameter and an Arc length of 900 mm:

KEYSTROKE	DISPLAY
1. Enter Circle diameter and Arc length:	
On/C On/C	**0.**
1 5 0 0 Conv 9 Circ	**DIA 1500. MM**
9 0 0 Conv 9 Arc	**ARC 900. MM**
2. Find Degree of Arc, Chord Length, Segment Area, Pie Slice Area and Segment Rise:	
Arc	**ARC 68.75°**
Arc	**CORD 847. MM**
Arc	**SEG 75364. SQ MM**
Arc	**PIE 337500. SQ MM**
Arc	**RISE 131. MM***

**You may also find arched segment wall stud sizes, based on the stored o.c. After the segment rise, the calculator will display the stored o.c., then calculate the stud sizes with each successive press of the Arc key.*

Compound Miter

If the wall corner angle is 60° and the spring (crown) angle is 38°, find the miter angle and bevel angle for installing crown moulding:

KEYSTROKE	DISPLAY
On/C On/C	0.
3 8 Stor Comp Miter	SPRG STORED 38.00°
6 0 Comp Miter	MITR 46.84°
Comp Miter	BEVL 43.03°
Comp Miter	SPRG STORED 38.00°
Comp Miter	CRNR 60.00°

Concrete Columns

Find the total cubic kilograms and cubic meters (using 1500 kg per cubic meter) required for three (3) colums, each with a diameter of 1600 mm and a height of 3000 mm:

KEYSTROKE	DISPLAY
1. Recall stored Weight per Volume:	
On/C On/C	0.
Rcl 0	STORED 1500 KG Per CU M
2. Enter diameter:	
1 6 0 0 Conv 9 Circ	DIA 1600. MM
3. Find total volume:	
3 0 0 0 Conv 9 Height	
Conv Circ *(Column/Cone)*	COL 6.03 CU M
4. Convert to kilograms:	
Conv 1 *(kg)*	9048. KG

Concrete Footings

Find the volume of concrete required for an 200 mm x 400 mm footing that measures 30 m in length:

KEYSTROKE	DISPLAY
On/C On/C	**0.**
2 0 0 Conv 9 × 4 0 0 Conv 9 =	**80000. SQ MM**
Stor 6	**F-AR** STORED **80000. SQ MM**
3 0 m Conv Width *(Footing)*	**FTG 2.4 CU M**

Concrete Volume for Driveway

Calculate the cubic meters of concrete required to pour a driveway that measures: 14 m long x 4 m wide x 125 mm deep. If concrete is $65 per cubic meter, what will it cost?

KEYSTROKE	DISPLAY
On/C On/C	**0.**
1 4 m	**14 M**
× 4 m	**4 M**
× 1 2 5 Conv 9 =	**7 CU M**
× 6 5 Conv 0 *(Cost)*	**$455.00** *(total cost)*

Converting D:M:S

Convert 23° 42’ 39” to decimal degrees:

KEYSTROKE	DISPLAY
On/C On/C	0.
2 3 • 4 2 • 3 9	DMS 23.42.39
Conv • *(dms◂▸deg)*	23.71°

Polygon — Brick Paving

Find the Full Angle, Bi-sect Angle, Side Length, Perimeter and Area of a Polygon for paving a brick patio. The radius is 2300 mm and the number of sides is five:

KEYSTROKE	DISPLAY
On/C On/C	0.
2 3 0 0 Conv 9 Conv Arc *(Radius)*	RAD 2300. MM
5 Conv Run *(Polygon)*	FULL 108.00°
Run	HALF 54.00°
Run	SIDE 2704. MM
Run	PER 13519. MM
Run m	AREA 12.6 SQ M

Squaring-Up a Foundation

*Square-up a 4700 mm x 3100 mm foundation:**

KEYSTROKE	DISPLAY
On/C On/C	0.
4 7 0 0 Conv 9 Length	LNTH 4700. MM
3 1 0 0 Conv 9 Width	WDTH 3100. MM
Width Width	SQUP 5630. MM

*Alternative Method

*Square-up a 4700 mm x 3100 mm foundation:**

KEYSTROKE	DISPLAY
On/C On/C	0.
4 7 0 0 Conv 9 Run	RUN 4700. MM
3 1 0 0 Conv 9 Rise	RISE 3100. MM
Diag	DIAG 5630. MM

Studs

Find the number of 400 mm On-center studs required for a wall measuring 7600 mm in length:*

KEYSTROKE	DISPLAY
On/C On/C	**0.**
7 6 0 0 Conv 9 Conv 5 *(Studs)*	**STUD 20.**

**If you are working with a number other than 400 mm On-center, change it via Stor 5 (e.g., 500 mm o.c., enter 5 0 0 Conv 9 Stor 5, then recalculate above).*

RIGHT ANGLE/FRAMING

Pitch — Converting Roof Angle

Find the % Grade, Slope and Pitch in mm if the roof angle is 30.25°:

KEYSTROKE	DISPLAY
On/C On/C	0.
3 0 • 2 5 Pitch	PTCH 30.25°
Pitch	%GRD 58.31828
Pitch	SLP 0.583183
Pitch Conv 9	PTCH 178.MM

Converting Slope

Find the Pitch in Inches, Pitch Degrees, and Percent Grade if the slope is 0.625:

KEYSTROKE	DISPLAY
On/C On/C	0.
• 6 2 5 Conv Pitch *(Slope)*	SLP 0.625
Pitch Conv 9	PTCH 190.5 MM
Pitch	PTCH 32.01°
Pitch	%GRD 62.5

Common Rafter Length

Find the point-to-point length of the Common rafter on a 175/300 mm pitched roof with a span of 8500 mm. What are the angle cuts?

KEYSTROKE	DISPLAY
1. Enter Pitch:	
On/C On/C	0.
1 7 5 Conv 9 Pitch	PTCH 175. MM
2. Enter half the span as the run:	
8 5 0 0 Conv 9 ÷ 2 =	4250. MM
Run	RUN 4250. MM
3. Find the Common and cuts:	
Diag	DIAG 4900. MM
Diag	PLMB 29.86°
Diag	LEVL 60.14°

Regular Hip/Valley and Jack Rafters

A roof's Pitch is 255/300 mm and half the total span is 1800 mm. Find the lengths of the Common, Hip/Valley and Jack rafters. Also find the incremental jack adjustment and the cut angles. (Jack rafters at 400 mm On-center spacing.)

KEYSTROKE	DISPLAY
1. Find the Common rafter length:	
On/C On/C	0.
1 8 0 0 Conv 9 Run	RUN 1800. MM
2 2 5 Conv 9 Pitch	PTCH 225. MM
Diag *(Common)*	DIAG 2237. MM
2. Find the Hip/Valley rafter length and cut angles; then the incremental jack adjustment, Jack rafter lengths and cut angles:	
Hip/V	H/V 2872. MM
Hip/V	PLMB 27.56°
Hip/V	LEVL 62.44°
Hip/V	CHK1 45.00°
Jack	JKOC STORED 400. MM
Jack	INCR 497. MM
Jack	JK 1 1740. MM
Jack	JK 2 1243. MM
Jack	JK 3 746. MM

Jack	JK 4 249. MM
Jack	JK 5 0. MM
Jack	PLMB 36.43°
Jack	LEVL 53.57°
Jack	CHK1 45.00°

Irregular Hip/Valley

A roof has a 225/300 mm Pitch, an irregular Pitch of 200/300 mm, and half the span is 2000 mm. Solve the Hip/Valley length. On-center spacing is 400 mm.

KEYSTROKE	DISPLAY
1. Find Common rafter length:	
On/C On/C	0.
2 2 5 Conv 9 Pitch	PTCH 225. MM
2 0 0 0 Conv 9 Run	RUN 2000. MM
Diag	DIAG 2486. MM
2. Enter On-center spacing and irregular Pitch; find irregular Hip rafter:	
Rcl 5 *(o.c.)*	OC STORED 400. MM
2 0 0 Conv 9 Conv Hip/V Conv 9 *(Ir/Pitch)*	200. MM
Hip/V	IH/V 3353. MM

Rake-Wall – No Base

Find each stud size in a Rake-Wall with a peak of 1000 mm, and a length of 1500 mm. Use 400 mm as your on-center spacing:

KEYSTROKE	DISPLAY
1. Enter Rise and Run:	
On/C On/C	0.
1 0 0 0 Conv 9 Rise	RISE 1000. MM
1 5 0 0 Conv 9 Run	RUN 1500. MM
2. Find stud lengths:	
Conv Rise *(R/Wall)*	
	RWOC STORED 400. MM
Rise	RW 1 733. MM
Rise	RW 2 467. MM
Rise	RW 3 200. MM
Rise	BASE 0 MM
3. Find Rake-Wall angle of incline:	
Rise	RW 33.69°

Rake-Wall – With Base

Find each stud size in a Rake-Wall with a peak of 1200 mm, a length of 2400 mm, and a base of 1500 mm. Use 400 mm as your On-center spacing:

KEYSTROKE	DISPLAY

1. Enter Rise and Run:

On/C On/C	0.
1 2 0 0 Conv 9 Rise	RISE 1200. MM
2 4 0 0 Conv 9 Run	RUN 2400. MM

2. Enter base and find stud lengths and angle of incline:

1 5 0 0 Conv 9 Conv Rise *(R/Wall)*	
	BASE 1500. MM
Rise	RWOC STORED 400. MM
Rise	RW 1 2500. MM
Rise	RW 2 2300. MM
Rise	RW 3 2100. MM
Rise	RW 4 1900. MM
Rise	RW 5 1700. MM
Rise	BASE 1500. MM
Rise	RW 26.57°

STAIRS

Stairs — Given Rise and Run

You're going to build a stairway that has a floor-to-floor height of 3100 mm, a run of 3800 mm, and a desired riser height of 200 mm (default). Find the stair values:

KEYSTROKE	DISPLAY
1. Enter rise and run:	
On/C On/C	0.
3 1 0 0 Conv 9 Rise	RISE 3100. MM
3 8 0 0 Conv 9 Run	RUN 3800. MM
2. Recall stored 200 mm desired riser height, then find the stair values:	
Rcl 7	R-HT STORED 200 MM
Stair	R-HT 194. MM
Stair	RSRS 16.
Stair	R+/– 4. MM
Stair	T-WD 253. MM
Stair	TRDS 15.
Stair	T+/– -5. MM
Stair	OPEN 2976. MM
Stair	STRG 4782. MM
Stair	INCL 37.48°

Stairs — Given Rise Only

You're building a stairway with a total rise of 3000 mm. Using the default riser height of 200 mm and tread width of 250 mm, find the stair values:

KEYSTROKE	DISPLAY

1. Enter known Rise:

On/C On/C — **0.**

3 0 0 0 Conv 9 Rise — **RISE 3000. MM**

2. Recall stored desired stair riser height:

Rcl 7 — **R-HT STORED 200. MM**

3. Recall stored desired stair tread width:

Rcl 9 — **T-WD STORED 250. MM**

4. Find stair values:

Stair	**R-HT 200. MM**
Stair	**RSRS 15.**
Stair	**R+/– 0. MM**
Stair	**T-WD STORED 250. MM**
Stair	**TRDS 14.**
Stair	**T+/– 0. M**
Stair	**OPEN 2853. MM**
Stair	**STRG 4482. MM**
Stair	**INCL 38.66°**

Stairs — Riser Limited Function

Calculate stairs using the Riser Limited function, if you must limit the Riser Size to 200 mm:

KEYSTROKE	DISPLAY
1. Enter Rise and Run:	
On/C On/C	0.
3 0 0 0 Conv 9 Rise	RISE 3000. MM
3 8 0 0 Conv 9 Run	RUN 3800. MM
2. Recall stored 200 mm Desired Riser height and find stair values:	
Rcl 7	R-HT STORED 200. MM
Conv Stair *(Riser Limited)*	R-HT 200. MM
Stair	RSRS 15.
Stair	R+/– 0. MM
Stair	T-WD 271. MM
Stair	TRDS 14.
Stair	T+/– -6. MM
Stair	OPEN 3092. MM
Stair	STRG 4715. MM
Stair	INCL 36.43°

DEFAULT SETTINGS

After a *Clear All* (Conv ⊠), your calculator will return to the following settings:

STORED VALUES	DEFAULT VALUE
Desired Riser Height	**7-1/2** INCH
Desired Tread Width	**10** INCH
Floor Height	**10** INCH
On-center Spacing	**16** INCH
Weight per Volume	**1.5** Ton Per CU YD
Block Area	**128.** SQ INCH
Block Length	**16** INCH
Footing Area	**264.** SQ INCH
Spring (crown) Angle	**45.00°**

If you replace your batteries or perform a *Full Reset** (press Off, hold down ⊠, and press On/C), your calculator will return to the following settings (in addition to those listed above):

PREFERENCE SETTINGS	DEFAULT VALUE
Fractional Resolution	1/16
Area Display	Standard
Volume Display	Standard

(Cont'd)

(Cont'd)

PREFERENCE SETTINGS	DEFAULT VALUE
Stairway Headroom	6 feet 8 inch
Rake-Wall	Descending
Arched Wall	Outside
Jack Rafters	Descending
Irregular Jack Spacing	OC-OC
Exponent	Off
Meter Linear Display	0.000
Decimal Degree Display	0.00°
Fractional Mode	Standard

Depressing the Reset button located above the* **Pitch *key will also perform a Full Reset.*

REPAIR AND RETURN

Return Guidelines:

1. Please read the ***Warranty*** in this User's Guide to determine if your Calculated Industries product remains under warranty **before** calling or returning any device for evaluation or repairs.

2. If your product won't turn on, check the batteries as outlined in the User's Guide.

3. If you need more assistance, please go to our website listed below

4. If you believe you need to return your product, please call a Calculated Industries representative between the hours of 7:00am to 4:30pm Pacific Time for additional information and a Return Merchandise Authorization (RMA).

Call Toll Free: 1-800-854-8075

Outside USA: 1-775-885-4900

www.calculated.com/warranty

CALCULATED INDUSTRIES®

Putting answers at your fingertips since 1978

This equipment has been certified to comply with the limits for a Class B computing device, pursuant to Subpart J of Part 15 of FCC rules.

Software copyrighted and licensed to Calculated Industries, Inc. by Construction Master Technologies, LLC, 2008.

Pocket Reference Guide copyrighted by Calculated Industries, Inc. © 2008.

Construction Master® and Calculated Industries® are registered trademarks of Calculated Industries, Inc.

ALL RIGHTS RESERVED

CALCULATED INDUSTRIES®

4840 Hytech Drive
Carson City, NV 89706 U.S.A.
1-800-854-8075 or 1-775-885-4900
Fax: 1-775-885-4949
E-mail: info@calculated.com
www.calculated.com

Designed in the U.S.A.
Printed in China

9/08

PRG4065EE-A